

What is claimed is:

1. A switch circuit comprising:

a first differential amplifier pair providing a portion of an isolation channel;  
5 a second differential amplifier pair providing a portion of a transmit channel; and  
a third differential amplifier pair providing a control bias for selecting either the  
transmit channel or the isolation channel.

2. The switch circuit of claim 1, further comprising:

10 an input terminal coupled to the first differential amplifier pair; and  
an output terminal coupled to the second differential amplifier pair.

3. The switch circuit of claim 2, further comprising:

a control terminal coupled to the third differential amplifier pair.

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4. The switch circuit of claim 3, wherein the control terminal provides a bias voltage to the  
third differential amplifier pair to enable one of two transistors within the differential  
amplifier pair.

20 5. The switch circuit of claim 1, wherein a first transistor of the third differential amplifier  
pair is disposed in the transmit channel, and a second transistor of the third differential  
amplifier pair is disposed in the isolation channel.

6. The switch circuit of claim 5, wherein enabling the first transistor permits an input signal to proceed to an output terminal of the circuit, and enabling the second transistor prohibits an input signal from proceeding to the output terminal.

5 7. The switch circuit of claim 1, wherein the circuit is formed as an integrated circuit on a Silicon Germanium substrate.

8. The switch circuit of claim 1, wherein each of the first and second differential amplifier pairs comprise at least two transistors with their emitters coupled.

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9. The switch circuit of claim 1, wherein the second differential amplifier pair comprises at least two transistors, wherein at least one inductor is coupled to each of the respective collectors of the at least two transistors.

15 10. The switch circuit of claim 1, wherein a pulse width of the control bias is less than 500 picoseconds.

11. The switch circuit of claim 1, wherein a pulse width of the control bias is between 200-300 picoseconds.

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12. A method for providing isolation between the input and output of a circuit comprising the steps of:

providing a first channel including at least one first differential amplifier pair, said first channel providing isolation between the input and output of the circuit;

providing a second channel including at least one second differential amplifier pair,  
said second channel providing coupling between the input and output of the circuit; and  
providing a control bias which selects one of the first channel or the second channel.

5 13. The method of claim 12, wherein the step of providing a control bias comprises supplying  
a control voltage to bases of a differential amplifier pair.

14. The method of claim 13, wherein a pulse width of the control voltage is less than 500  
picoseconds.

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15. The method of claim 13, wherein a pulse width of the control voltage is between 200-300  
picoseconds.